

LESSON ASSIGNMENTS

TEXT: *CLASSICAL MECHANICS: a modern perspective*
 V.D. Barger and M.G. Olsson, McGraw-Hill, Inc., 1995

| Week | Lesson | Topic | Reading |
|-----------|--------|------------------------------------|------------|
| Beginning | No | | Assignment |
| 20 Aug | 1 | Introduction | |
| | | CHAPTER 1: ONE-DIMENSIONAL MOTION | |
| | | A. Newtonian theory | 1.1, 1.2 |
| | 2 | B. Solving the equation of motion | 1.3, 1.5 |
| | 3 | “ | 1.4, 1.6 |
| | 4 | C. Oscillatory motion | 1.7 |
| 27 Aug | 5 | “ | “ |
| | 6 | “ | “ |
| | 7 | “ | “ |
| | 8 | CHAPTER 2 : ENERGY CONSERVATION | |
| | | A. One dimensional motion | 2.1, 2.2 |
| 3 Sept | 9 | “ | 2.3 |
| | 10 | B. Three dimensional motion | |
| | | 1. math background | 2.4 |
| | 11 | “ | “ |
| 10 Sept | 12 | 2. conservative forces | 2.5 |
| | 13 | “ | “ |
| | 14 | REVIEW | |
| | 15 | C. Motion in a plane | 2.6 |
| 17 Sept | 16 | **** EXAM #1: MONDAY, SEPTEMBER 17 | |
| | 17 | “ | 2.7 |
| | 18 | Paper Topic | “ |
| | 19 | “ | 2.8 |
| 24 Sept | 20 | “ | “ |
| | 21 | CHAPTER 3: LAGRANGIAN METHOD | |
| | | A. Lagrange's equations | 3.1, 3.2 |
| | 22 | “ | 3.3 |
| | 23 | “ | “ |
| 1 Oct | 24 | B. Examples | 3.4 |
| | 25 | “ | 3.5 |
| | 26 | “ | “ |
| | 27 | “ | “ |

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|--------|----|---|-----|
| 8 Oct | 28 | C. Hamiltonian method | 3.6 |
| | 29 | “ | “ |
| | 30 | “ | 3.7 |
| 15 Oct | 31 | “ | “ |
| | 32 | REVIEW **** Paper Proposal **** | |
| | 33 | EXAM #2: THURSDAY, OCTOBER 18 | |
| | 34 | CHAPTER 4: MOMENTUM CONSERVATION | |
| | | A. Conservation of momentum | 4.1 |
| 22 Oct | 35 | B. Frames of reference | 4.2 |
| | 36 | C. Elastic collisions | 4.3 |
| | 37 | “ | “ |
| | 38 | “ | 4.4 |
| 29 Oct | 39 | D. Inelastic collisions | 4.5 |
| | 40 | CHAPTER 5: ANGULAR MOMENTUM CONSERVATION | |
| | | A. Central forces | 5.1 |
| | 41 | “ | “ |
| | 42 | “ | “ |
| 5 Nov | 43 | B. Planetary motion | 5.2 |
| | 44 | “ | 5.3 |
| | 45 | C. Space missions | 5.4 |
| | 46 | “ | 5.5 |
| 12 Nov | 47 | REVIEW | |
| | 48 | EXAM #3: THURSDAY, NOVEMBER 15 | |
| | 49 | CHAPTER 8: GRAVITATION | |
| | | A. Tides 8.2 ***** Submit Term Paper ***** | |
| 19 Nov | 50 | “ | “ |
| | 51 | B. General relativity | 8.4 |
| 26 Nov | 52 | C. Perihelion advance | 8.5 |
| | 53 | CHAPTER 7: ACCELERATED COORDINATE SYSTEMS | |
| | | A. Transform to noninertial frames | 7.1 |
| | 54 | B. Fictitious forces | 7.2 |
| | 55 | “ | “ |
| 3 Dec | 56 | C. Motion on the Earth | 7.3 |
| | 57 | D. Foucault's pendulum | 7.4 |
| | 58 | REVIEW | |

FINAL EXAM